DOCUMENT RESUME

ED 303 471 TM 012 376

AUTHOR Barrington, Gail V.; And Others
TITLE Project ABC: Advancement Based on Competency. 1982-1987 Summary Report.
SPONS AGENCY Alberta Dept. of Education, Edmonton.; Calgary Board of Education (Alberta).
PUB DATE Dec 87
NOTE 33p.
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; Competence; *Competency Based Education; Core Curriculum; Credits; *Curriculum Evaluation; Foreign Countries; *High Schools; High School Students; Models; Secondary Education; *Student Promotion; Summative Evaluation; Time Factors (Learning)
IDENTIFIERS Alberta (Calgary); Continuous Progress Education Project; *Project Advancement Based on Competency

ABSTRACT

Project Advancement Based on Competency (ABC) was a 5-year study funded jointly by the Alberta Department of Education and the Calgary Board of Education for the sum of $999,950. The study extended from 1982 to 1987, exploring alternatives to the Carnegie Unit in three senior high schools in Calgary. The Unit was established in 1907 to regulate the distribution of college pension funds, but quickly came to standardize the quality of high schools. Project ABC provided the three schools with the opportunity to remove the fixed time-credit relationship and to replace it with continuous progress based on individual competency. This study assessed student achievement, curriculum adherence, removal of time as a credit requirement, competency as the basis for awarding credit, considerations for provincial applications, and budget considerations. Three independent models evolved from the project: (1) the Department-based Model; (2) the Parallel Core Program Model; and (3) the School-wide Model. Student achievement overall was generally comparable to non-project student achievement within the Calgary Board of Education and the Province of Alberta. Few significant differences were identified. Provincial curriculum was adhered to in individualized instruction and continuous progress formats, and in some cases, it was found to be superior. Results suggest that the criterion of time can be removed and replaced by the criterion of demonstrated competency and that competency is an appropriate basis for advancement at both unit and course levels. Results of a 1932-40 study in the United States, analyzed during a literature review, indicated that personalized instruction and continuous progress are viable educational alternatives and should no longer be considered experimental. (TJH)

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Project ABC: Advancement Based on Competency Summary Report

Gail V. Barrington & Associates

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PROJECT ABC:

ADVANCEMENT BASED ON COMPETENCY

1982 - 1987

SUMMARY REPORT

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December 1987

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ACKNOWLEDGEMENTS

There are many people who have contributed over the years to this study and who have helped to make it a success. Sincere thanks is extended to them all and, in particular, to the following:

◊ The staff and students of William Aberhart, John G. Diefenbaker and Ernest Manning High Schools for their continued interest and commitment to the goals of Project ABC.

◊ The staff and students of the Business Education Department at Sir Winston Churchill High School and of the English Department at Central Memorial High School for participating as control groups.

◊ Dr. Bruce Johnson, Moira Hegarty, Garry Unsworth, Ron Ross and Jim Foote, who all contributed their expertise in the early stages of the project.

◊ Alberta Education staff including:
Calgary Regional Office: Dr. Bernie Brunner, Marshall Dzurko, Dick Daley, Dr. Gary Gay, Dorothy Haines, Ken McKenna, Pat McLaughlan, John Pauls, Sharon Prather, Don Robertson, Jane Sereda, Jack Smith, Bruce Stonell;
Computer Services: Dr. Jack Reid, Dave Laing, Harry Henshaw and Margaret Shum.

◊ Calgary Board of Education staff including:
Administration: Dr. Bill Dickson;
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Program Evaluation - Allan McLennan and Joy Glenhorn;
Research and Testing - Dr. Janelle Holmes and Patsy Chan;
Word Processing: Karen Roberts, Agnes Struck, Carmen Keshmiri-Seif, Joyce Clark, Lori Preston, Joanne Barker, Lynn Milner;
Printing Services: Dave Fleshman, Anne Clouston, Gisela Kordewiner and their staff.
Viscount Bennett Centre: Elaine Langille, Elayne Thorne, Purnima Thakor.

◊ University of Calgary staff including:
Academic Computer Services: Gisela Engels and Kim Wagstaff;
Faculty of Education: Dr. Wally Unruh and Dr. Claudio Violato.

◊ Gail V. Barrington & Associates staff including:
Nancy J. Helledie and Carrie MacWilliams for their excellent research assistance.

◊ And of course Bruce and Wil Barrington for their continued love and support.

ABSTRACT

Project ABC: Advancement Based on Competency was a five-year study funded jointly by Alberta Education and the Calgary Board of Education for the sum of $999,950 which took place from 1982-1987. It explored alternatives to the Carnegie Unit in three senior high schools. Three independent models evolved from the project, specifically the Department-based Model, the Parallel Core Program Model and the School-wide Model. Student achievement overall was found to be generally comparable to non-project student achievement within the Calgary Board of Education and the Province of Alberta. Few significant differences were identified. Provincial curriculum was adhered to in individualized instruction and continuous progress formats and in some cases was found to be superior. It was concluded that it was possible to remove the criterion of time and replace it with the criterion of demonstrated competency and that indeed competency was an appropriate basis for advancement at both unit and course levels.

A review of the literature revealed that a similar but far more extensive study had been conducted in the United States from 1932-1940 entitled the Eight-Year Study. Based on the findings of that study and this, nearly fifty years later, the conclusion was drawn that personalized instruction and continuous progress are viable educational alternatives and should no longer be considered experimental.

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PROJECT ABC: ADVANCEMENT BASED ON COMPETENCY

Project ABC: Advancement Based on Competency was a five-year study conducted from 1982-1987. It was funded jointly by Alberta Education and the Calgary Board of Education for a total of $999,950.

Purpose

The purpose of Project ABC was to explore alternatives to the Carnegie Unit in three Calgary high schools. It provided these schools with the opportunity to remove the fixed time-credit relationship and to replace it with continuous progress based on individual competency. A formative evaluation was conducted in each of the study's five years and a summative evaluation was completed at the end of the project. This document provides a summary of information and findings reported in the Project ABC Summative Evaluation Report.

Background

The Carnegie Unit was established in 1907 to regulate the distribution of college pension funds but quickly came to standardize the quality of high schools in North America. Currently in Alberta, one credit requires a minimum of 25 hours of instruction; thus, a five-credit course requires a minimum of 125 hours of instruction. It has long been felt, however, that more or less than the 125 hours might be more appropriate for an individual student's learning needs than the traditional requirement.

A review of the literature revealed that the idea of breaking the Carnegie Unit occurred as early as 1932. A long-buried study entitled the Eight-Year Study was conducted in the United States from 1932-1940, funded by the Carnegie Corporation and the Rockefeller Foundation. It explored ways of improving high school effectiveness and experimented with flexible time use in the high school. Thirty schools across the country were released from the usual subject and unit requirements for college and university admission for a period of eight years. Each school developed its own model. Some of the innovations which emerged included a school-determined curriculum, student-centred instruction, increased student challenge, a Teacher Advisor system, joint decision making by teachers and administrators, increased parent involvement and careful evaluation. The students were also followed through their university careers and were found to earn higher grade averages than their control groups in all subject areas but foreign languages. Another interesting outcome was the higher percentage of non-academic honours earned by these students who were judged to be more motivated, resourceful, objective and aware than their peers. It was concluded that departures from the prescribed patterns of both time use and curriculum did not lessen the students' readiness for college and, in fact, that the more fundamental the changes initiated by the high school the better the students achieved in college.

A teacher from one of the original 30 schools came to influence Project ABC indirectly. J. Lloyd Trump went on to direct the Model Schools Project for the National Association of Secondary School Principals in 1968. One of those schools was Bishop Carroll High School in Calgary which served as a reference for Project ABC.

Project ABC evolved from an interest held by Alberta Education in exploring alternatives to the Carnegie Unit and by a perceived need by the Calgary Board of Education to address the needs of dysfunctional students whose needs were not then being met by the high school.

Each of the three high schools involved in Project ABC developed its own model and each is outlined in turn.

Department-based Model - *William Aberhart High School*
Business Education Program

The Department-based Model was housed in an attractive carpeted open area in an upstairs wing of William Aberhart High School. The individualized instruction and continuous progress employed in the delivery of the program enabled all Business Education 20- and 30-level courses to be offered simultaneously throughout the day, thus accommodating the demands of most students' timetables. Students were able to progress from course level to course level as they completed course requirements. Teachers circulated in the open area discussing specific problems. A clerical aide provided support for material coordination and tracking and record-keeping activities. While the area could house 106 students at a time, it was seldom full by project end due to declining enrolments in the Business Education program. Causes for the decline were perceived to be largely external to the department and included implementation of the Grade 12 Diploma Examinations and the recommendations of the Secondary Education Review, both of which encouraged students to focus on core curriculum areas. Further, within the school, the growth of the Bilingual Program restricted students' involvement in option areas. The decline in enrolment threatened continuation of the open area as teachers began to be required to teach elsewhere in the school. Despite problems encountered by the program, it remained at project end viable in concept, mature and smoothly operating.

Parallel Core Program Model - *John G. Diefenbaker High School*
PEP (Personalized Education Program)

The Parallel Core Program Model operated in John G. Diefenbaker High School and provided a school-within-a-school model for core courses involving approximately 100 students in each of Grades 10

through 12. Students were selected for the program based on the results of a learning independence test, parent permission and student motivation. A combination of flextime and demand time was used by students to organize their school day according to their perceived learning needs for each of the core areas. Students attended regular classrooms for their option courses. Time management skills were stressed. A Teacher Advisor system was used to help with student tracking and communication. A test centre, staffed by parent volunteers, facilitated the program as did paraprofessional assistants in the Science Lab area and in the Math area. By 1987, 34% of the school's population, or 350 students were in this program. Throughout the project, students in the Parallel Core Program Model expressed significantly greater satisfaction than the control group of students in the school's regular program with the way the program was set up, with teacher interest in students and with communication both with teachers and their peers.

School-wide Model - Ernest Manning High School
Pace (Personalized and Continuous Education)

The School-wide Model at Ernest Manning High School turned a traditional comprehensive program into an individualized and continuous progress model for Grades 10 through 12. The project grew to encompass the whole school, although Grade 12 was operational only during the final year of the project. Model implementation was a vast undertaking and required a great deal of time to realign staff philosophy and define goals and processes. By project end, the school had provided students with a personalized learning environment where differing learning rates and different learning styles were addressed. In most classrooms, at any one time, a variety of instructional methods could be observed, including lecture, small group discussion and independent work. A clerical aide managed the test centre with the support of parent volunteers, and a Teacher Advisor system fostered communication with students and their parents. The program was fully functional by the end of the project but needed more time to mature.

Study Design

A Steering Committee comprised of representatives from both Alberta Education and the Calgary Board of Education guided the evaluation of Project ABC and developed a series of evaluation goals, as follows:

1. Primary Goals

   To assess the success of project schools in providing students with acceptable alternatives to the time-credit relationships expressed in the current Junior and Senior High School Handbook where:

   (a) The student achievement level is as good as or better than achievement levels, in both local and provincial programs.

   (b) The Alberta Curriculum is adhered to.

   (c) Time has been removed as a requirement in awarding credit.

   (d) Competency has been made the basis for awarding credit.

2. Secondary Goals

   (a) To provide project schools with information concerning students' educational experiences in terms of the principles of personalized instruction and continuous progress.

   (b) To provide Alberta Education with information regarding adherence to the Alberta Curriculum in project schools.

   (c) To provide Alberta Education with information for use in the consideration of province-wide application of alternatives to time credit.

Further, several key concepts were defined by the committee. *Personalized instruction* was defined as including:

1. Placement appropriate to learning style
2. Varied learning environments
3. A "stop mechanism" for students to obtain assistance at any point in a course
4. Demonstrated competency in each unit of a course before proceeding to the next unit
5. Opportunities for enrichment

Continuous progress was defined as including:

1. A learning rate compatible with ability
2. Flexible timetabling to accommodate personal choice or need

3. Advancement based on competency demonstrated rather than time spent in a course

Later in the project, school personnel defined the concept of *competency* as follows:

> Students must demonstrate a competency level of at least 50% in a unit or course before proceeding to the next unit or course. However, in certain cases, higher competency levels for particular units may be required (e.g., Safety Unit in Chemistry).

Based on these goals, a series of research questions was developed and an evaluation study was designed. There were two distinct parts to the evaluation: the formative evaluation which involved an annual cycle of evaluative activites culminating in an annual Formative Evaluation Report; and the summative evaluation which is summarized in this document.

The Formative Evaluation Reports (Years One to Five) focussed on the concepts of personalized instruction and continuous progress which were of particular interest to the schools' planning process. The reports provided feedback to the schools regarding their progression toward project goals. Students, teachers and administrators in both models and control groups completed attitudinal questionnaires. Perceptions which were significantly different among project groups formed the basis for interview questions for samples of the three participant groups in each model. The final grades of project students were compared to individual model control groups' grades as well as to system-wide and province-wide mean grades. The Summative Evaluation Report, summarized here, focussed specifically on the evaluation goals identified by the Steering Committee which were of particular interest to Alberta Education. Key variables were extracted from the attitudinal questionnaires administered from 1983 to 1987 and were analyzed for changes over time and for differences among models in the last year of the project using univariate analysis of variance. In a similar way, achievement data of project

students in 30-level courses were analyzed for change over time within each model and, in the final year, between project students and those in the system and the province. In addition, a policy Delphi study was conducted with a panel made up of project teachers and administrators. This provided additional useful background information which is reported here such as perceived project benefits and problems, important teacher characteristics and key components of an alternative to time-credit program.

In brief, the Summative Evaluation Report focussed on six main areas as follows:

Student Achievement
- (a) Within each school over time
- (b) Between each school and the city and provincial control groups

Curriculum Adherence
- (a) Content match
- (b) Standards comparability

Removal of Time as a Credit Requirement
- (a) Use of a Stop Mechanism
- (b) Provision of flexible entrance to next level of a course
- (c) Course learning pace compatible with student ability

Competency as the Basis for Awarding Credit
- (a) Use of tests at the unit level
- (b) Demonstration of competency at the unit level before proceeding
- (c) Advancement to the next course based on student competency, not time spent

Considerations for Provincial Applications

Budget Considerations

Study Findings

What follows is a summary of study findings related to the six areas outlined above.

STUDENT ACHIEVEMENT

For the summative evaluation, student achievement scores for 30-level courses in project schools were compared with the scores of all Calgary Board of Education students and all Alberta students registered in those courses using the computer program Statistical Package for the Social Sciences (SPSS-X) ONEWAY procedure, a univariate analysis of variance which identified significant differences between mean scores over time and between project mean scores and control group scores. This was followed by ***post hoc*** testing using the Scheffé procedure which helped to pinpoint those differences.

Study findings indicated that achievement levels of students within each program did not vary significantly over the course of the project. Achievement did tend to be somewhat higher in the Parallel Core Program Model and somewhat lower in the Department-based Model but not to a statistically significant degree. Enough data were not collected in the School-wide Model by project end to determine tendencies in achievement levels. Achievement levels did not appear to be negatively affected by program changes resulting from the implementation of Project ABC. Overall, achievement levels of project students were generally comparable with achievement levels of non-project students in the Calgary Board of Education and the Province of Alberta. It was concluded that the project evaluation goal related to student achievement had been achieved and that student achievement levels in Project ABC were as good as achievement levels in both local and provincial programs.

CURRICULUM ADHERENCE

Curriculum developed by Project ABC teachers was reviewed annually by consultants from Alberta Education to see if content or standards in project courses remained comparable to those across the province. In their opinion, the development of individualized

materials did not have a negative effect on either the content or the standards of courses offered in Project ABC, and in some cases, particularly in the Parallel Core Program Model, materials were judged to be superior. It was concluded that the project evaluation goal related to adherence to the Alberta Curriculum had been achieved.

REMOVAL OF TIME AS A CREDIT REQUIREMENT

Student perceptions regarding the removal of time as a credit requirement were collected through the administration of an annual questionnaire which measured their attitudes and perceptions. Teachers and administrators were also polled with questionnaires. A sample of each of the three groups was interviewed annually to help clarify the data collected. For the summative analysis, the key concepts of ***use of a stop mechanism***, ***provision of flexible entrance to the next course level*** and ***course learning pace compatible with student ability*** were extracted from the student questionnaire and analyzed. Descriptive statistics for these concepts were also extracted from teacher and administrator questionnaires. Interview data from the five Formative Evaluation Reports were also reviewed as were field notes based on school observation and other relevant documentation.

The Department-based Model allowed students to stop and solve their problems as they were encountered and provided flexible course entrance. Variable learning rates were evident in the program but students taking longer than a semester to complete a course were treated on an individual case basis rather than by department policy.

The Parallel Core Program Model also allowed students to solve problems as they occurred in their learning. The program did not provide flexible course entrance because there was no continuous progress option available to students. Variable learning rates were evident within the individual course unit as students determined their own schedules based on perceived learning needs but students progressed from unit to unit together.

The School-wide Model also provided a stop mechanism for students encountering difficulty. Evidence supported teacher and administrator perceptions that learning rate variability and flexible course entrance were in effect, although student perceptions were affected negatively to an extent by administrative policies about time use which were tightened near the end of the project. Additional time to study this program would have allowed these policies to be assimilated and thereby would have clarified program perceptions.

All three models were determined to be functioning outside of the traditional Carnegie Unit, allowing students more or less time than the 125 hours as their learning needs dictated. The Department-based and School-wide Models provided for continuous and individual progress from unit to unit and from course to course. The Parallel Core Program Model provided for variable learning rates within the unit but did not adopt continuous progress as a delivery system focussing instead on enrichment. It was concluded that all three models had removed time as a requirement in awarding credit, although the Parallel Core Program's more structured approach to time had not been anticipated.

COMPETENCY AS THE BASIS FOR AWARDING CREDIT

Perceptions regarding competency as the basis for awarding credit rather than time spent in a course were treated in a manner similar to those outlined above. The key concepts included ***use of tests at the unit level***, ***demonstration of competency at the unit level before proceeding***, and ***advancement to the next course based on student competency, not time spent***. These were analyzed along with relevant interview data, field notes and documentation.

The Department-based Model tested students at the unit level and ensured that students demonstrated competency in their course material before progressing to the next course level. Students differed in their opinion from teachers and administrators,

however, as to whether students had to demonstrate competency at the unit level. There appeared to be a relationship between the nature of course content and whether competency was required for each unit; in particular, non-sequential material was presented in such a way that students could do make-up units at the end of the course and, in that case, their advancement to the next unit was not based on demonstrated competency. There did not appear to be a policy covering progression from unit to unit, rather it was determined by the individual teacher based on the nature of the course material.

The Parallel Core Program Model also tested students at the unit level and ongoing evaluation was stressed. Individual advancement based on competency at both the unit and course levels was not perceived to be available by either students or teachers, while administrators were more positive in their perceptions regarding advancement at the unit level. Competency issues were dealt with in a variety of ways other than individual continuous progress including the following: one-on-one student interaction with teachers was increased due to timetable flexibility in the program; initial student selection procedures identified independent learners for the program; curricular materials addressed learning style differences; and a program policy for dealing with unsuccessful students moved them, once remediation had been attempted, to more appropriate courses or out of the program altogether. In these ways student competency levels were addressed by the Parallel Core Program Model although individual advancement in either unit or course was not encouraged.

The School-wide Model tested students at the unit level and required competency to be demonstrated at both the unit and the course levels before students could advance. Students, teachers and administrators agreed in their perceptions about the success of this model in making competency the basis of awarding credit.

All three models addressed competency issues as they related to non-traditional use of time. The School-wide Model was the most successful in terms of making competency the basis for awarding credit according to Project ABC criteria. The Department-based Model also made competency the basis for credit although some non-sequential material was handled differently at the unit level. The Parallel Core Program Model made competency the criterion for awarding credit within the traditional parameters of the semester or school year but did not encourage individual advancement at either unit or course levels. Appropriate student selection for the program and a variety of instructional techniques helped to ensure that students would succeed within allotted time limits. It was concluded that competency had been made the basis for awarding credit in the School-wide and Department-based Models but that individual advancement based on demonstrated competency was not encouraged in the Parallel Core Program Model.

CONSIDERATIONS FOR PROVINCIAL APPLICATION

In order for Alberta Education to consider province-wide application of Project ABC-type alternatives, a policy Delphi study was conducted in 1987 to poll participants' views on project outcomes. Several identified project benefits were supported by interview data. In particular, students appreciated the opportunity to learn at their own rate and to work on a one-on-one basis with their teachers. Teachers and administrators also felt that students assumed more responsibility for their learning and developed confidence and independence. Teachers gained from the project as well in terms of increased freedom to experiment, greater awareness of different teaching styles and greater satisfaction. Alberta Education consultants believed that Project ABC teachers had grown professionally from the experience. The greatest benefit to project schools to emerge was the promotion of an atmosphere of cooperation between staff and students. Schools also gained materially from their involvement in the project through increased funding which provided support for paraprofes-

sionals and improved library resources. They also benefited from additional computers, learning materials and instructional equipment.

The most serious disadvantages or perceived problems emerging from the project were rated lower by Delphi participants than perceived benefits, thereby highlighting the overall positive perception of the project. For students, the main disadvantage was the ease with which they could fall behind in their work. Teachers and administrators also felt that students sometimes lacked understanding about program demands and how to handle them. For teachers, perceived disadvantages included the added stress and potential burnout associated with being part of an alternative project, increased workload, and frustration with unclear goals, particularly in the School-wide Model. Problem areas identified for schools included increased resource needs, more complex resource management and the need for strong leadership.

Key components for an alternative to time-credit program were identified, the most critical of which included:

1. Specially selected teachers who demonstrate the characteristics of openness to change, industry, receptiveness, energy, and flexibility, who are team players and who support the alternative philosophy.
2. Support from the local board, the community and government.
3. Adequate lead time for curriculum development and time for ongoing revision.
4. Decisive leadership.
5. A sound educational rationale coupled with adequate staff development and new teacher orientation.
6. Effective student monitoring, tracking and record keeping systems.
7. Clear and consistent policies, expectations and consequences for students.
8. A school-wide philosophy and total school staff involvement in and commitment to the alternative program.
9. Adequate clerical and paraprofessional support.
10. Adequate ongoing teacher release time for planning and coordination.
11. Sufficient funding to initiate and maintain the program.

12. Adequate program size to maintain one-on-one interaction between teachers and students.
13. Timetable flexibility.
14. Good liaison with feeder schools.
15. Good communication with parents.

A final critical component was not identified in the policy Delphi but emerged from the perceptions of Alberta Education consultants and final-year interviews with students, teachers and administrators. This was the need for a flexible physical plant with a variety of instructional spaces available for large groups, seminars, and individual study as well as traditional classroom areas. In the two larger Project ABC programs, library space was enlarged or reorganized to meet the demands of individualized instruction and traditional classroom spaces were converted into test centres.

It was concluded that Project ABC-type programs could successfully be implemented in other schools and school jurisdictions. Based on the fact that three different models developed in this project and that similar diversity was experienced in the Eight-Year Study, it was also concluded that models should develop which were appropriate to school-based needs. The policy Delphi helped to pinpoint a number of critical considerations for any school attempting a similar program, the most important of which was teacher selection.

BUDGET CONSIDERATIONS

The different nature of a Project ABC-type program means that some budget considerations must be addressed before such a program can be developed.

The first area is related to resources. Instructional materials need to be expanded to include a broader range and number of materials to meet the demands of an individualized program.

Tightened security and increased maintenance costs are also required. Information processing facilities such as computers, word processors, photocopiers, and of course paper are at a premium in this kind of a program.

The second area where budget is affected relates to staff costs. There is an increased requirement for paraprofessional and clerical support in this type of program to assist with student tracking, the production and organization of materials, test supervision and lab coordination. Professional development costs are affected by the need for staff training in the philosophical underpinnings of an individualized approach and in specific curriculum areas. New teacher orientation is an ongoing cost. Release time must also be provided for initial curriculum development. There are minor ongoing costs for annual release time for revision and planning.

It was concluded that in order to manage the more complex resource requirements of a Project ABC-type program, a decentralized budgeting model which includes staff resources is appropriate.

Evaluator Perceptions

Evaluating Project ABC over a five-year period was a unique research experience. As the models grew, the process became more complex, more engrossing, more encompassing. The further the evaluation progressed, the greater the challenge became. As the three models evolved, there was a greater and greater demand for responsive evaluation techniques which could address changing needs. The original evaluation design was expanded to include extensive interviewing and on-site observation. The final-year policy Delphi was able to address issues which had not even been identified five years before.

If the study process expanded far beyond initial expectations so too did study rewards. The formative nature of the evaluation process allowed for immediate feedback into planning. School administrators were kept apprised of annual study findings as they occurred and these then helped to guide goal-setting activities for the subsequent term or year. The Formative Evaluation Reports came to be eagerly anticipated as project goals grew closer. The evaluation process worked.

The schools, too, found themselves challenged beyond initial expectations and their rewards increased as well. As each issue was resolved, three or four others would present themselves. Successful group decision-making processes proved to be critical to model development. As staff members discussed philosophical issues and methodological approaches, they were forging new visions for what a high school could be. Each of those visions was unique.

Of the three models, the most traditional one was probably the Department-based Model at William Aberhart High School. And yet for Business Education instruction, it was a radical departure. The use of a real-life office environment had a profound effect on instructional processes and student expectations. Collegiality among staff members flourished. In a sense, however, the program did not provide an alternative; it was the only way Business Education was offered at that school. At a department level, it appeared that providing a choice in delivery systems was not feasible. Individual learning styles were not addressed, because although materials were organized into unit packs, they presented instruction in one format only, namely "Read and Do." Students with special reading or language needs were unlikely to succeed. Subject areas such as Law lost some of the learning that occurs in a spontaneous class discussion. But for the most part, the skills-oriented Business Education courses transferred nicely to an individualized approach and students gained motivation through the freedom afforded them to work at their own rate. The model

provided a viable learning alternative to traditional Business Education instruction. Too soon, however, the program had to face the harsh reality of a factor beyond its control - declining enrolment. At project end, the program was jeopardized by pupil-teacher ratios falling below the level at which the program could be maintained and its future was uncertain.

The Parallel Core Program Model placed the greatest strains on the evaluation process. Had a goal-free evaluation model been developed five years ago, problems might have been avoided but a definite set of goals had been developed and therefore had to be measured. What occurred was that as the program grew and prospered, it charted a different course from the project mainstream. Continuous progress did not develop; instead, staff focussed on enrichment and learning styles. The tools developed to measure continuous progress were not appropriate for gauging what was actually happening at the school. Nevertheless, program excellence was evident and participant satisfaction was high, significantly higher in fact, than that of traditional students in the same school. The contextual component built into the evaluation process provided an opportunity to react to developing study needs and thus it was possible to measure actual student use of time during the school day. An increasing focus on interview data as the study progressed also permitted an exploration of perceptions not measured by study instruments. In the end, it was clear that the program had broken the Carnegie Unit but had set up different parameters from the other two programs to regulate student movement through course material. The unquestionable quality of the resulting program led to the conclusion that Project ABC-type programs were alternatives which were not necessarily appropriate for every student but which were very appropriate for independent learners. The program also demonstrated that it could co-exist successfully with its traditional counterpart and dispelled any notion of elitism by its success with non-academic students as well as high achievers.

The School-wide Model took a long time to incubate. However, its slow generation proved to be valuable in the end because many constructive lessons were learned about implementing a Project ABC-type program. As Grade 10 shakily got off the ground in the third year of the project, there was more than one observer who questioned the possibility of ultimate success in terms of Project ABC goals. However, all the questioning, debating and self-analysis paid off in the long run, not in small part due to an administrative team who simply would not give up the vision. In the end, the pieces fell into place, and while certainly not yet perfect, Ernest Manning High School is now providing an alternative to time-credit where competency, not time spent, is the critical factor.

Conclusions

What follows is a list of conclusions about Project ABC which have been drawn based on data collected over the five-year period 1982-1987.

1. Achievement levels of Project ABC students were as good as student achievement levels in both local and provincial programs.

2. The Alberta Curriculum was adhered to in all three Project ABC schools. In the Parallel Core Program Model, provincial requirements were exceeded.

3. The three Project ABC schools successfully provided alternatives to the Carnegie Unit.

4. Project ABC demonstrated that competency rather than time spent in a course can become the basis for awarding credit.

5. Personalized instruction and continuous progress are viable educational alternatives and should no longer be considered experimental.

6. Program delivery can be successfully individualized, although the nature of the subject matter will have an impact on the degree to which individualization can occur.

7. Models for a Project ABC-type program should emerge from the nature of the individual school and its community.

8. This type of program is particularly appropriate for students who are independent learners.

9. This type of program is best implemented by teachers who support and practise the project philosophy.

10. This type of program requires a clear program vision, commitment of the total school staff and strong administrative leadership.

11. This type of program requires more complex financial management than a traditional program and involves both start-up and maintenance costs which are different from traditional resource allocations in order to support resource needs, professional development and orientation, teacher release time, and paraprofessional and clerical assistance.

12. A flexible physical plant design enhances the implementation of this type of program but it is not essential.

Recommendations for the Calgary Board of Education

Based on data collected in Project ABC, it is recommended to the Calgary Board of Education that:

1. Contingent upon Alberta Education approval, the three Project ABC programs be granted exemption from the Carnegie Unit.

2. Contingent upon Alberta Education approval, opportunity be provided for other Calgary Board of Education schools to offer Project ABC-type programs which are also granted exemption from the Carnegie Unit.

3. The School-wide Model achievement levels be evaluated for two additional years.

4. Consideration be given to exploring different ways of allocating resources to Project ABC-type schools.

5. Consideration be given to the teacher characteristics identified in this study as being critical to program success when assigning staff to alternative Project ABC-type programs.

6. Consideration be given to student learning styles and to matching them with appropriate program delivery when enrolling students in Project ABC-type programs.

7. Flexible instructional spaces be considered in the construction of new schools and the renovation of existing ones.

8. Project ABC teachers and administrators be formally commended for their dedication and commitment in making these programs successful and that their successes be celebrated.

Recommendations for Alberta Education

Based on data collected in Project ABC, it is recommended to Alberta Education that:

1. Contingent upon Calgary Board of Education approval, the three Project ABC programs be granted exemption from the Carnegie Unit.

2. Opportunity be provided for Alberta school jurisdictions to offer Project ABC-type programs which are also granted exemption from the Carnegie Unit.

3. Incentives be provided for school authorities embarking on a Project ABC-type program to support model development.

4. A clearing house for individualized curriculum materials be established.

5. Consideration be given to more frequent administrations of Grade 12 Diploma Examinations during the year to accommodate the needs of students in continuous progress programs.

6. A follow-up study be conducted to determine the success of Project ABC students in post-secondary programs or work environments.

Implications

During the five-year period of Project ABC, it became apparent that a project of this magnitude would have far-reaching and long-term implications which would extend beyond 1987 and into the lives of current and future students, teachers and administrators in Alberta. A discussion of some of the implications follows.

PROPOSED ALBERTA SCHOOL ACT

The proposed Alberta School Act is based on five principles: access to quality education; equity; flexibility; responsiveness; and accountability. Of particular relevance to Project ABC, and other programs which provide an alternative to time-credit, is the concept of flexibility. These programs address students' needs for flexible time use as well as supporting the philosophies of personalized education and advancement based on competency. The proposed legislation leaves the door open for any school board to offer alternative programs such as those described here.

EDUCATIONAL POLICY

The Secondary Education in Alberta Policy Statement which was formally released in 1985 by the Minister of Education and the Premier of Alberta set a new direction for Alberta's high schools. Within the policy were several principles which related directly to the goals of Project ABC. These included the following:

Principle #1 The secondary school, in cooperation with other agencies in society, must assist each student to become a competent, confident and responsible individual. However, the secondary school must assume primary responsibility for the intellectual development of each student and for ***fostering the desire for lifelong, self-directed learning***.

Principle #2 The development and implementation of the instructional program must take into account the following considerations:

- ***the nature and needs of the learner***
- the nature and needs of a changing society
- the nature of knowledge in each subject area
- ***the learning environment***[1]

Among the guidelines set for senior high programs in the document was one which acknowledged the potential already being explored by Project ABC, specifically:

> While the content and objectives of courses are set, the secondary school program and administrators should encourage

> teachers to use appropriate teaching strategies and materials to accommodate individual learning styles and needs. Opportunities for continuous learning, individualized instruction, and other strategies ... should be expanded at both the junior and senior high school levels.[2]

By 1987, in a document entitled ***Proposed Directions for Senior School Programs and Graduation Requirements***, specific mention was made of alternatives to the Carnegie Unit and school boards were invited to explore this alternative provided that all students had access to at least minimal instructional time to realize course expectations.

Project ABC is in the forefront of alternatives to the Carnegie Unit. Now that the project has been completed and the results have been reported, it may have an impact on Alberta's high schools. Alternative use of time in schools and alternative delivery systems have created positive learning environments. More schools may want to explore them.

TEACHING AND LEARNING STYLES

There are many individuals whose lives have been changed as a result of their involvement in Project ABC. After spending up to five years on revising their methodologies, trying new approaches, being open to change, becoming familiar with different learning styles, fostering student independence and changing the traditional teaching approach, there are teachers whose teaching styles have been permanently altered as a result of teaching in project schools. They have often been heard to say, "I could never go back to the old style of teaching." Whether they have an option remains to be seen, but even in a closed classroom situation they may find a lot of their skills transferable and their teaching enriched as a result. Further, the leadership skills which many have developed as a result of meeting the challenges of Project ABC may well encourage them to pursue career paths they might not have otherwise.

Undoubtedly, there has been an impact on students as well. They have had their learning style needs addressed in a number of innovative ways. Some have experienced success through the provision of additional time. Others have been challenged by enrichment activities they would not have had time for otherwise. Still others have been able to concentrate on areas of weakness while moving more quickly through areas of strength. Many have learned time management skills and have had closer, more satisfying relationships with their teachers.

Administrators met the challenge of finding innovative solutions to staff development needs, budget constraints, student tracking and record keeping, and school leadership problems.

ADDITIONAL RESEARCH

Several areas for further research emerge from Project ABC. The substantial documentation resulting from this study includes five Formative Evaluation Reports, the Delphi Study, and the Summative Evaluation Report, each of which is based on significant amounts of quantitative and qualitative data. Along with this Summary Report, they form a rich source of information for further analysis.

Other research which should be conducted includes the continued tracking of student achievement at the 30-level in the School-wide Model for two additional years as the Grade 12 program was only operational in the final year of the project. In addition, Project ABC students should be tracked in their post-secondary or career situations to determine the long-term effects of personalized instruction and non-traditional use of time. Fifty years ago, the Eight-Year Study tracked high school students throughout their college years but did not attempt to follow up those graduates who went immediately into the work force although the need to do so was acknowledged. Perhaps this time such a follow-up study could be implemented, supported by foundation grants as was the case in the Eight-Year Study.

Finally, the impact of the project should be tracked in terms of teacher development over the next five years. This study has identified the profound effect that Project ABC has had on teaching styles but project teachers' future development in terms of leadership, risk taking ability, creativity and job satisfaction is worth pursuing further.

CONCLUDING COMMENTS

Project ABC was a successful adventure in learning. For teachers who watched their students turn into independent, self-directed learners, for administrators who watched their teachers develop unforeseen strengths and skills, and for the project director and the project evaluator who watched the three schools address and meet the challenges they had set for themselves, the journey was worth the effort.

High school traditions which have linked time and credit since early in the century were confronted and overturned. Project ABC proved that there are other ways to manage time in high schools and other ways to award credit. Satisfaction rose when students had more control over how they spent their time in school. They appreciated working at their own pace. Satisfaction rose when teachers could address individual student needs as they occurred. They appreciated working outside the bounds of a rigid timetable. Satisfaction rose when administrators did not have to fail students simply because they needed more time. They appreciated the improved school climate which resulted from increased cooperation between staff and students.

Project ABC is no longer an experiment. It is an alternative approach to high school which acknowledges individual learning needs, individual learning rates and individual learning styles. What better way to approach the end of the century, but with a new vision about how high schools can work.

NOTES

1. Government of Alberta, ***Secondary Education in Alberta - Policy Statement***, June 1985, pp. 7-8. (Italics added.)

2. Ibid., p. 15.